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09/991,002	11/15/2001	William J. Biter	RM528a	3456

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EXAMINER

CIRIC, LJILJANA V

ART UNIT PAPER NUMBER

3743

DATE MAILED: 08/28/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
09/991,002

Applicant(s)  
Biter et al.

Examiner  
Ljiljana V. Ciric

Art Unit  
3743



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Nov 15, 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above, claim(s) none is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on Nov 15, 2001 is/are a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 2 6) ☐ Other:

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## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the separator as recited in claim 5, for example, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Specification***

2. The abstract of the disclosure is objected to because it does not avoid using the phraseology and language often used in patent claims (such as the term “means”), and also because, even though the claims are drawn to an apparatus, the abstract fails to sufficiently summarize the structure of the inventive apparatus. Correction is required. See MPEP § 608.01(b).

3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the term “separator” appearing at least in claim 5 does not have clear and proper antecedent basis in the specification as filed. For example, “Various methods are possible

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to insure” [page 14, lines 6-7] may be replaced with “Various separators may be used to insure” in order to meet the proper antecedent basis requirement for the claimed subject matter.

4. The use of numerous trademarks (i.e., “Kapton” appearing on line 2 of page 7, “Kynar” appearing on line 4 of page 7, and “Inframetrics” appearing on line 9 of page 9) has been noted in this application. *Each of these should be capitalized wherever it appears and be accompanied by the generic terminology.*

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

***Claim Rejections - 35 U.S.C. § 112***

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1 through 21 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. More particularly, while the specification does appear to define the upper limit of a “low” emissivity as being about 0.1 and a “high” emissivity as corresponding to a value of 0.9, it is hereby noted that the emissivity for any given material is highly variable and dependent on the temperature of the emissive surface of any given material,

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but the specification fails to indicate to which temperature range or ranges these “defining” values correspond, and thus fails to provide sufficient a clear explanation as to what exactly is encompassed by either a “low emissivity” or a “high emissivity” as recited in the claims. Similarly, the specification fails to define or otherwise explain what is meant by a “high” dielectric constant, a “high” thermal conductivity, and a “high” dielectric strength as recited in claim 6 of the instant invention.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1 through 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

For example, each of the terms “low” and “high” in the claims are relative terms which renders the claims indefinite. The terms “low” and “high” are not defined by the claims, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. More particularly, as used to characterize the respective emissivity of various materials and/or layers recited in the claims, each of these terms renders the respective emissivity of the materials and/or layers indeterminate and the claims indefinite because, while the specification does appear to define the upper limit of a “low” emissivity as being about 0.1 and a “high” emissivity as corresponding to a value of 0.9, it is hereby noted that the emissivity for any given material is highly variable and

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dependent on the temperature of the emissive surface of any given material, but the specification fails to indicate to which temperature range or ranges these “defining” values correspond.

Similarly, the specification fails to define which values are included and which ones are excluded by a “high” dielectric constant, a “high” thermal conductivity, and a “high” dielectric strength as recited in claim 6 of the instant invention, thus rendering the aforementioned limitations indefinite with regard to the intended scope of protection sought.

Furthermore, absent the recitation of a particular point of reference with respect to which a given layer is “an outer” or “an inner” layer, it is not clear with respect to which element or elements the “outer high emissivity layer” (as recited in claim 3, for example) is an “outer” layer and with respect to which element or elements the “inner layer” (as also recited in claim 3, for example) is an “inner” layer, thereby rendering indefinite the metes and bounds of protection sought by the claim. The same limitations appearing in claims 8 through 21 render these claims similarly indefinite.

With regard to the claims, applicant is reminded that a claim limitation is to be automatically interpreted invoking 35 U.S.C. 112, sixth paragraph *only* if the claim limitation uses the phrase “means for” or “step for” modified with functional language only, and not by structure, material or acts for achieving the specified function. Any limitation including the term “means” but not use the entire phrase “means for” is therefore being interpreted broadly and not as invoking 35 U.S.C. 112, sixth paragraph. *Cf. Seal-Flex, Inc. v. Athletic Track and Court Construction*, 172 F.3d 836, 849-50, 50 USPQ2d 1225, 1233-34 (Fed. Cir. 1999). Also *Cf. Morris*, 127 F.3d at

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1055, 44 USPQ2d at 1028. Also *Cf. Rodime PLC v. Seagate Technology, Inc.*, 174 F.3d at 524, 531, 41 USPQ2d 1429, 1435-36 (Fed. Cir. 1999).

***Claim Rejections - 35 U.S.C. § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. As best can be understood in view of the indefiniteness of the claims, claims 1 through 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Clifford.

Clifford discloses an electrostatically controlled spacecraft radiator essentially as claimed, including: an object or spacecraft outer layer 14 in the form of a metal plate [see column 3, lines 18-20] which may be the skin of a spacecraft [see column 4, lines 32-36]; and, a movable and flexible covering comprising composite electrostatically positioned members 12, each composite layer comprising an “outer” high emissivity wrinkled/crinkled metal layer and an “inner” dielectric layer comprising a plastic film [see Figure 2], the wrinkles being broadly readable on the “separator” as recited in claim 5 of the instant invention; a switchable DC electric power source 28 [column 3, lines 34-35], wherein a non-powered state of the outer high emissivity metallic coating causes a non-contact mode and a low heat transfer rate away from the spacecraft to occur and wherein a powered state of the same outer high emissivity metallic coating causes the contact mode and a high heat transfer rate away from the spacecraft to occur.

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The relatively smooth metallic outer layer 14 is understood as inherently having a “low” emissivity as best can be understood in view of the indefiniteness of the term. Each wrinkled metal layer of the composite electrostatically positioned members 12 is understood as inherently having a “high” emissivity due to the roughness of the emissive surface, again as best can be understood in view of the indefiniteness of the term.

The reference thus reads on the claims.

### ***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Andoh, Tokumasu et al., Gillery, and Babel et al. each discloses a multi-layer coating with given absorption and emittance characteristics, for spacecraft and/or solar collector applications. Webb, Shyffer, Riordan et al., Hnilicka, Jr., O'Sullivan, Jr., Lieberman, Fletcher et al., Charoudi, Altoz et al., Wing et al., Miyazaki, Cusson et al., Yun, Benson et al., and Potter each discloses a thermal switching mechanism of interest. Caplin discloses a dual function deployable radiator and radiator cover for a spacecraft.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ljiljana (Lil) V. Ciric, whose telephone number is (703) 308-3925. While she works a flexible schedule that varies from day to day and from week to week, Examiner Ciric may generally be reached at the Office during the work week between the hours of 10 a.m. and 6 p.m. ET.




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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Bennett, can be reached on (703) 308-0101. The fax phone number is (703) 305-3463.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0861.

lvc

August 24, 2003

  
LJILJANA V. CIRIC  
PRIMARY EXAMINER  
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